

REMARKS

Claims 1-31 are currently pending in the application. Claims 1, 2, 3, 5-8 and 18 are amended, and new claims 23-31 are added for Examiner's consideration. The foregoing separate sheets marked as "Listing of Claims" show all the claims in the application, with an indication of the current status of each.

IDS

Examiner states that the IDS statement does not include a concise explanation of the relevant of each patent listed that is not in the English language, and thus foreign documents JP 2004-47873, JP2002-252222, JP2002-118169, JP2001-326222, and JP2001-230244 have not been considered. Applicant herewith provides English language abstracts of each of the documents. The abstracts provide a concise explanation of the relevance of each of those documents. Applicant respectfully requests consideration of these documents by Examiner.

Claim Objections

Claim 18 is objected to as being of improper dependent form. Claim 18 recites straight-chain organic silica compounds.

Claim 18 was originally (indirectly) dependent on claim 11. Original claim 11 was directed to a porous insulating film produced by the method of "any one of claims 1 to 10". In order to eliminate multiple claim dependency, claim 11 was amended to recite a porous insulating film "produced by the method of claim 1", i.e. recitation of claim 2 was eliminated. Claim 2 recites straight-chain organic silica compounds but claim 1 does not. Thus, the amendment to claim 11 eliminated straight-chain organic silica compounds from the ambit of claims dependent on claim 11, such as claim 18.

Applicant has hereby added new claims 30 and 31 to the application. Claims 30 and 31 do not add any new matter, being derived directly from the original multiple dependent claims of the application. New claims 30 and 31 are analogous to claims 11 and 16, respectively, but encompass a porous insulating film "produced by the method of claim 2" and a semiconductor device using the porous insulating film, thereby encompassing straight-chain organic silica compounds. Claim 18 has now been amended to depend from new claim 31, and the straight-chain organic silica compounds recited therein thus have proper antecedent basis in claim 2. Applicant submits that this amendment overcomes this objection.

In view of the foregoing, Applicant requests reconsideration and withdrawal of this objection.

Claim Rejections: 35 USC § 102(e)

Claims 1, 5-7, 9, 11-13, 16 and 19-21 stand rejected under 35 USC § 102(e) as anticipated by Miyoshi (US 2004/0253777). This rejection is traversed.

Claim 1 has hereby been amended to recite that the insulator film is produced by introducing material gas, which is fully diluted with inert gas in advance, to reduce the resolution of raw materials. With the features recited in amended claim 1, an insulator film with the specific inductive capacity, the distribution of pore diameter, and the composition disclosed and claimed in the present application can be achieved.

In contrast, Miyoshi discloses producing an insulator film by introducing material gas directly into the chamber without any dilution and proceeding with mixture and reaction with the excitation gas simultaneously on the substrate. Without this feature, an insulator film with the specific inductive capacity, the distribution of pore diameter and the compositions disclosed in the present invention cannot be achieved. Therefore, Miyoshi does not anticipate the present invention as claimed.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claim Rejections: 35 USC § 102(e)

Claims 2, 3, 8, 18 and 22 stand rejected under 35 USC § 102(e) as anticipated by Miyoshi (US 2004/0253777). This rejection is traversed.

Miyoshi teaches as described above. Briefly, Miyoshi does not teach dilution of material gas with an inert gas.

In contrast, claim 2 has currently been amended to recite that the insulator film is produced by introducing material gas, which is fully diluted with inert gas in advance, to reduce the resolution of raw materials. Without this feature, an insulator film with the specific inductive capacity, the distribution of pore diameter and the compositions disclosed in the present invention cannot be achieved. Therefore, Applicant submits that the subject matter of claim 2 is fully distinguished from that of Miyoshi.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claim Rejections: 35 USC § 103(a)

Claim 4 stands rejected as obvious over a combination of Miyoshi (as above) and Hayashi (US2005/0267253). This rejection is traversed.

Miyoshi teaches as described above, i.e. Miyoshi does not teach dilution of material gas with an inert gas.

The earliest priority date of the present application is November 28, 2003, as evidenced by the certified copy of Japanese patent application 2003-400683 submitted herewith, to which the present application claims priority.

Hayashi claims priority to PCT application PCT/JP03/08989, filed July 15, 2003, and published by WIPO on January 22, 2004. US patent law states that an international patent application can be used as a valid reference against a US patent application only if the international application 1) designated the United States, which Hayashi did, and 2) was published in English (see enclosed copy of 35 USC 102e), which Hayashi did not do. Applicant refers Examiner to the enclosed copy of page 2 of the bibliographic data for Hayashi, accessed from the WIPO website on March 5, 2009. The bibliographic data states that the Hayashi application was published in Japanese. Therefore, Hayashi is not a valid reference against the claims of the present invention under any statute, the earliest date of invention attributable to Hayashi being the US publication date of December 1, 2005.

Therefore, Hayashi cannot be used to cure or mitigate the defects if Miyoshi.

In addition, the Examiner states that Hayashi teaches only changing a supply ratio during film formation, i.e. Hayashi also does not teach the feature of dilution of material gas with an inert gas. Thus, in addition to the fact that Hayashi does not constitute a valid reference, Hayashi also does not cure or mitigate the defects of Miyoshi, and thus no combination of these two references could render the subject matter of claim 4 obvious.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claim Rejections: 35 USC § 103(a)

Claims 10 and 14 stand rejected as obvious over a combination of Miyoshi (as above) and Gleason (US2004/0137243). This rejection is traversed.

Both Miyoshi and Gleason disclose producing an insulator film by introducing material gas directly into the chamber without any dilution and proceeding with mixture and reaction with the excitation gas simultaneously on the substrate.

Claims 10 and 14 depend on claim 1. Claim 1 has hereby been amended to recite that the insulator film is produced by introducing material gas, which is fully diluted with inert gas in advance, to reduce the resolution of raw materials. Neither Miyoshi and Gleason teach this feature, and thus no combination of Miyoshi and Gleason can render the subject matter of claims 10 and 14 obvious. Further, without this feature, an insulator film with the specific inductive capacity, the distribution of pore diameter and the compositions disclosed in the present invention cannot be achieved.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claim Rejections: 35 USC § 103(a)

Claim 17 stands rejected as obvious over a combination of Miyoshi (as above) and Hiyashi (as above). This rejection is traversed.

As discussed above, Miyoshi does not anticipate the subject matter of the present. Also as discussed above, Hayashi is not a valid reference against the claims of the present invention under any statute, the earliest date of invention attributable to Hayashi being the US publication date of December 1, 2005.

In any case, the Examiner states that Hiyashi teaches only that in the vicinity of an interface between the porous insulating film and a non-porous insulating film, a relative concentration of carbon atoms in at least the porous insulating film changes stepwise or continuously. Therefore, Hiyashi does not cure or mitigate the deficiencies of Miyoshi, and a combination of Miyoshi and Gleason does not render the subject matter of claim 17 obvious.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Other matters

Claims 3 and 5-8 have hereby been amended to eliminate that repetitive recitation of "formula ____". Applicant submits that these amendments do not add any new matter to the application, being entirely formal in nature, and respectfully requests entry of these amendments, and consideration and allowance of the amended claims.

New Claims

New claims 23-29 have hereby been added to the application. Support for new independent claim 23 is found in the specification as filed, for example, in Figures 14 and 28 (specific inductive capacity) and in Figures 11, 17 and 21 (distribution of pore diameter with single peak). Applicant submits that these new claims thus do not add any new matter to the application, and respectfully requests consideration and allowance of new claims 23-29.

Concluding Remarks

In view of the foregoing, it is requested that the application be reconsidered, that claims 1-31 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: ruth@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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